ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES

ANNUAL MANAGEMENT REPORT

1971

ARCTIC-YUKON-KUSKOKWIM REGION

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May 1972

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PREFACE

This report presents all available information concerning the management of commercial and subsistence fisheries in the Arctic-Yukon-Kuskokwim Area. Although data from many special research projects are included in this report, complete documentation of these projects and results will be presented in separate reports.

The A-Y-K area was given regional status in 1971 with the result that all districts are now areas. This report utilizes the old nomenclature, i.e., A-Y-K area, Kuskokwim district, etc.

Data presented in this report supercedes information found in previous management reports. An attempt has been made to correct errors in previous reports and previously unrecorded data have been incorporated into this report which are so indicated by appropriate footnotes.

The report is organized into the following major sections:

1. Area Introduction. This is a general and brief description of the area, inhabitants, fishery resources, fisheries and management practices.

2. Area Summary. This section summarizes current year data for the area and makes comparisons with previous years.

3. District Reports. There are several unique and separate fishing districts in the area and separate comprehensive reports are presented for each.

In order to facilitate use of this report, the tabular data has been separated into current year tables and appendix tables where annual comparisons are made. The text for each major section is followed by current year tables and then by appendix tables.

The following is an explanation of how effort and catch per unit effort data, presented throughout this report, have been derived. Boat (or fisherman) hours is computed by arbitrarily assuming that if a fishing boat delivers in any 24 hour fishing period, it fished the entire period. If the period was more than 24 hours long, then the vessel is assumed to have fished the complete period for as many hours as was open to commercial fishing.

Catch per fisherman (or boat) hour is obtained by dividing the total fisherman hours into the catch for the corresponding period of time.

Total fishermen (or boats) is the total number of fishermen making deliveries, irrespectively of how many deliveries made or days fished during a particular "season." There are a number of fishermen who deliver only once or twice during the entire season.

"Total days fished" is the total number of hours open for commercial fishing during the season divided by 24.

AREA INTRODUCTION

Boundaries

The Arctic-Yukon-Kuskokwim Area, as shown in Figure 1, is that portion of the State north of the Alaska Range and the Bristol Bay drainage. It includes all of the drainages of the Bering Sea and the Arctic Ocean from Cape Newenham to Demarcation Point at the Canadian border. In addition it includes the following Bering Sea Islands: Nunivak, St. Lawrence and St. Matthew. This is the largest management area in the State comprising over 400,000 square miles which is equal to the combined areas of California, Oregon, Washington and Idaho.

Fishery Resources

All five species of Pacific salmon are indigenous to the area with chum salmon being the most abundant. It is estimated that pink salmon, king salmon, coho salmon and red salmon follow in order of abundance.

Chum and pink salmon are found throughout the area although these species become relatively scarce north of the Kotzebue Sound drainage. Chum and pink salmon have been found as far north as Barrow and in the Beaufort Sea adjacent to the mouth of the Colville River. The largest spawning runs of king salmon occur from Cape Newenham to Norton Sound. King salmon are uncommon north of the Shaktoolik River in Norton Sound but have been found as far north as the Wulik River located about 100 miles northwest of Kotzebue. The greatest coho salmon runs occur in the Kuskokwim district and occurrence of this species has not been documented north of the Seward Peninsula. Red salmon are common in the Kuskokwim district and a small population exists in Salmon Lake on the Seward Peninsula. Occurrence of this species is very rare in the other districts.

Other species common to the freshwater and coastal marine habitats are: sheefish, several species of whitefish, arctic char, lake trout, rainbow trout, grayling, burbot, suckers, sculpins, blackfish, sticklebacks, lampreys, smelt, herring and several species of cods, flatfishes, crabs, shrimps and mollusks.

Water Quality

Water quality and spawning habitats in the area have been largely preserved in their original condition because pollution, logging and dam construction activities have been minimal or non-existent. It remains to be seen what impact the recent oil development activity will have on water quality and fishery resources in the area.

Commercial Fishing

The relatively recent development and expansion of the commercial salmon fishery has enabled many area residents to obtain a cash income when other employment is often sporadic or non-existent. Although commercial salmon fishing

in the area dates back to 1913, the only district having a sustained fishery prior to statehood (1959) was the Yukon district. In 1959 and 1960 Department biologists conducted reconnaissance surveys which indicated that harvestable surpluses of salmon were available in several districts that were not being commercially fished. The Department then liberalized certain regulations and encouraged processors to explore and develop new fishing grounds. As a result, sustained commercial salmon fisheries have been developed in the Kuskokwim, Norton Sound and Kotzebue districts. Even as late as 1968, a completely new salmon commercial fishery was initiated in Goodnews Bay, which is located just south of the Kuskokwim River mouth.

Nearly all of the area's commercial fishermen are resident Eskimos and Indians as are the vast majority of processing plant workers. Depending on the district being fished, commercial fishermen operate set and drift gill nets to capture salmon although a few fishwheels are still used in the upper Yukon River. Most fishermen operate small inexpensive skiffs powered with outboard motors. In the Yukon and Kuskokwim districts commercial fishing is prohibited outside the river mouths with the exception of two small marine fisheries in Kuskokwim Bay. In the Norton Sound and Kotzebue districts, all commercial salmon fishing is done in the coastal marine waters.

The decline in subsistence utilization of salmon has made it possible to increase commercial utilization in some districts during recent years. Also there has been an increased demand from Japanese markets forfresh frozen and cured A-Y-K salmon, especially chums. These trends are expected to continue, which should result in a moderate increase in production and economic value of the commercial fishery over the next few years.

Subsistence Utilization

There are approximately 30,000-40,000 Eskimo and Indian people in the area, the majority of which reside in excess of 110 small villages scattered along the coast and the major river systems. Nearly all of these native people are dependent to varying degrees on the fish and game resources for their livelihood.

Subsistence fishermen operate gill nets in the main rivers andto a lesser extent in the coastal marine waters to capture mainly salmon, whitefish and sheefish. Fishwheels take considerable number of salmon in the Yukon and Kuskokwim Rivers. Beach seines are occasionally used near the spawning grounds to catch schooling or spawning salmon as well as several other species of fish. Traps and fish weirs of various designs are also used, mainly in the fall and winter months, to capture whitefish, sheefish, blackfish and burbot. Sheefish, pike, char, tomcod and king crab are frequently taken through the ice by handlines.

Compared to commercially caught fish there is very little wastage of any portion of the fish taken for subsistence purposes. Themajor portion of the fish is sun-dryed or smoked for later consumption while the head and viscera are usually fed to sled dogs.

The Department has conducted annual surveys of the important subsistence salmon fisheries since the early 1960's. During this period the recorded annual subsistence harvests have ranged between 580,000 to 850,000 salmon. The majority of salmon taken are chums. Subsistence harvest information prior to 1960 is incomplete or entirely lacking for many years, but there are some records indicating that in excess of two million salmon were taken in some years during the early 1900's.

About 1930, the airplane began replacing the sled dog as a mail carrier, and this started the gradual decline of the subsistence salmon fishery. This decline has been accelerated in the past few years as increased welfare payments and employment opportunities, including commercial fishing activities, have become available to the native people. Another very important factor tending to affect subsistence fishing effort during recent years is the increasing use of snow vehicles which may be replacing sled dogs at a faster rate than did the airplane. Since considerable numbers of salmon and other fish are fed to sled dogs, fewer fish will be required for subsistence purposes as the canine population declines. The decline in subsistence fishing is not related necessarily to fish abundance, but mainly reflects decreases in effort and dependence due to a changing way of life.

Management

The Division of Commercial Fisheries of the Alaska Department of Fish and Game is responsible for the management of commercial and subsistence fisheries in this vast area. There are four fishery management biologists assigned to the area which includes the area biologist and an assistant in Anchorage in addition to two assistants in Bethel. A research biologist, presently conducting studies of Yukon River salmon, is also stationed in Anchorage. In addition, from twenty-five to thirty summer employees are hired each season to assist the permanent staff in conducting various management and research studies.

Operating expenses for the A-Y-K area management and research program from July 1, 1970 through June 30, 1971, were approximately $210,200. Of this total, state and federal funds provided $168,800 and $41,400 respectively.

The main objective of the Department's program is to manage the commercial salmon fisheries on a sustained yield basis in addition to obtaining needed information to determine the potential for commercial fisheries on under-utilized species, such as herring, char and whitefish. Present commercial salmon fishing regulations are still relatively restrictive in order to insure that sufficient salmon are provided for subsistence fishery and spawning ground requirements.

The basic regulation that governs the commercial salmon harvest in all districts is the scheduled weekly fishing period. Commercial fishing is normally allowed for a total of from two to four days a week during the open season, which depends on the district and species involved. The fishing effort usually occurs

during the entire run and not just during any particular segment of the run. Occasionally more or less fishing time is allowed, depending upon fishing conditions and the strength of the runs or spawning escapements as determined by special studies conducted by the Department.

Due to the vast size of the area and the silty characteristics of many streams, accurate estimates of the size of salmon runs and the spawning escapements are difficult to obtain. Fishery management is also hampered by the relative lack of comparative catch and return information since all the fisheries were either initiated or expanded through regulation changes only since 1961 or 1962. The management problem is further compounded by having to provide sufficient escapement after commercial fishing for the important subsistence fishery as well as for spawning purposes.

For these reasons the present commercial fishery is still considered to be somewhat experimental in nature. It has been a policy of the Alaska Department of Fish and Game to maintain recent levels of commercial utilization for a few years in order to establish definite trends in subsistence utilization and to obtain more information on the relationship between the salmon catch and return.

If there is no apparent change in run size, it is the Department's policy to increase commercial utilization once trends in declining subsistence utilization can be established. It should be pointed out that increases in commercial fishing efficiency are expected in some districts and may balance any immediate decline in subsistence utilization with the result that present regulations will be maintained or even made more restrictive.

A unique problem in the area is the so-called language barrier. Many of the older native people cannot read or speak English. Therefore, the staff must use translators when conducting the many public meetings that are annually conducted throughout the area. In addition many special regulation notices are distributed in both the English and Eskimo language. While it may normally take only a half hour or so to conduct a public meeting or hearing in English, it usually takes two to three times that long when Eskimo translators are used. To assist in the education and information program, a weekly fishery program is broadcasted during the fishing season over radio station KICY in Nome. This broadcast reaches most area fishermen.

Special Studies

Table 1 lists special studies undertaken during 1971 and includes a summary of objectives, procedures and results for each.

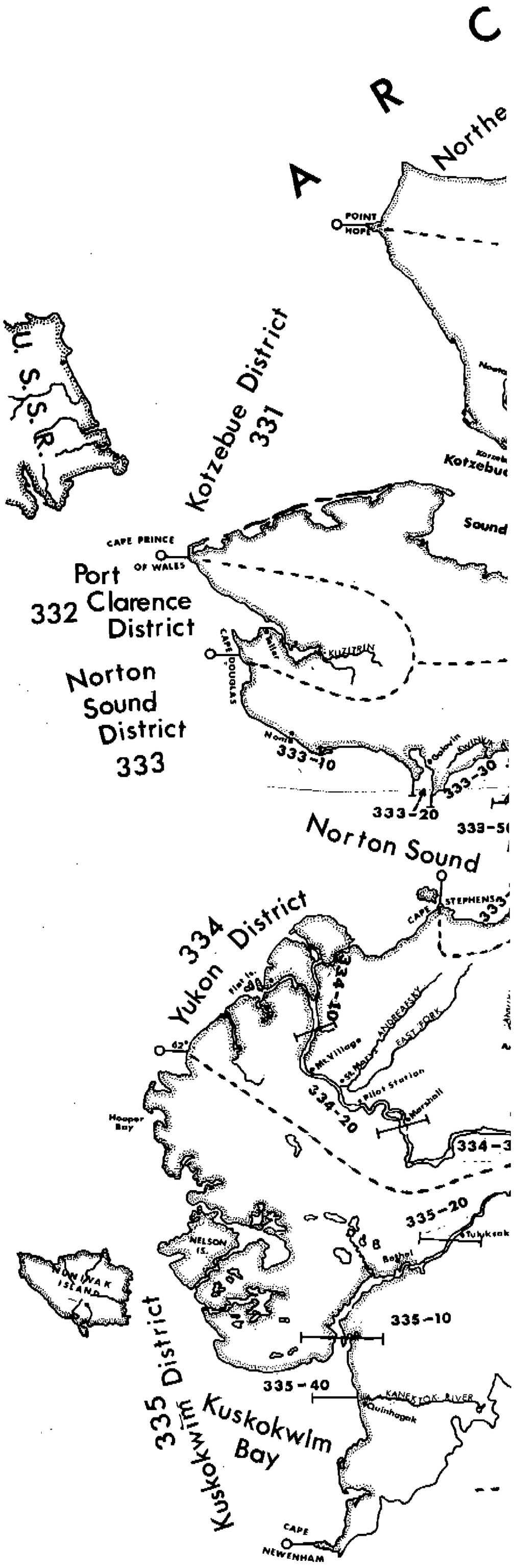
ARC
Northe
POINT HOPE
U.S.S.R.
Kotzebue District 331
Kotzebue
Sound
CAPE PRINCE OF WALES
Port Clarence District 332
CAPE DOUGLAS
KUZITRIN
Norton Sound District 333
333-10
333-20
333-30
333-5
Norton Sound
STEPHENS
334 Yukon District
334-10
Mt. Village
ANDREAFSKY
EAST FORK
Pilot Station
Marshall
334-20
334-3
Hooper Bay
335-20
Tuluksak
Bethel
335-10
335-40
KANEKTOK RIVER
Quinhagak
NELSON IS.
NUNIVAK ISLAND
335 District
Kuskokwim Bay
CAPE NEWENHAM

Table 1. Summary of special projects conducted in the Arctic-Yukon-Kuskokwim area by the Division of Commercial Fisheries, 1971.

1. Kuskokwim River Test Fishing

   a. location: Kweegooyuk on the east bank of the Kuskokwim River located 56 river miles below Bethel.

   b. objectives: determine run timing and relative abundance of king, red and chum salmon.

   c. results: a total of 766 king salmon and 254 chum salmon were taken in test fishing set gill nets that were fished from June 7 through July 15. The king salmon run occurred over a time span of at least 45 days with the run peaking approximately June 18. The chum salmon run peaked on July 7.

2. Yukon Test Fishing

   a. location: Flat Island in the south mouth of the Yukon River.

   b. objectives: determine run timing and relative abundance of king and summer chum salmon in the south mouth channel of the Yukon River.

   c. results: a total of 1,307 kings and 2,107 chum salmon were taken in the index set gill nets from June 13 through July 15. [Peak migrations for king salmon occurred during June 28-30 and also July 9-11. Peaks in the summer chum salmon migration occurred June 24-30 and July 9-12.] Based on comparative catch comparisons, the 1971 king salmon run was above average in magnitude. The 1971 chum salmon run was similar in magnitude compared to the runs of the two previous seasons.

3. Subsistence Salmon Fishery Surveys

   a. location: Kuskokwim River, Yukon River, Norton Sound, Port Clarence, and Kotzebue Sound.

   b. objectives: determine subsistence utilization of salmon and fishing effort needed for formulating future management procedures and goals, also collect tag recoveries from high seas and Department tagging programs.

   c. results: a total of 1,336 fishing families were surveyed and their catches totaled 71,343 king salmon and 399,445 other salmon. A total of 2,500 river miles were traveled by boat and 1,500 air miles by single engine aircraft in the conduct of the survey.

4. Kogrukluk River Weir

   a. location: mouth of the Kogrukluk River tributary to the Holitna River (Kuskokwim River system).

   b. objectives: determine daily and seasonal timing and magnitude of all species of salmon entering this stream; sample for age, sex and

Table 1. (continued) Summary of special projects conducted in the Arctic-Yukon-Kuskokwim area by the Division of Commercial Fisheries, 1971.

size information.

c. results: the weir was extensively damaged due to flooding conditions. Also, a portion of the Kogrukluk River above the weir was diverted into the adjacent Shotgun Creek. This resulted in a very minimum count of 42 king, 1,159 chum and 180 red salmon counted through the weir. In 1972 several modifications will be made to the weir and the river will be diverted back to its original channel.

5. Kwiniuk River Counting Tower

a. location: about five miles upstream from the mouth of the Kwiniuk River in Norton Sound located about 100 miles east of Nome.

b. objectives: determine daily and seasonal timing and magnitude of the chum and pink salmon runs, also to determine accuracy of aerial survey counts.

c. results: a total of 39,046 chum, 16,742 pink salmon was counted past the tower in 1971. These counts were the second highest and fourth poorest for chums and pinks respectively since 1965.

6. Yukon River Anadromous Fish Investigations

a. location: Yukon River drainage.

b. objectives: develop estimates or indices of the magnitude and quality of king and chum salmon escapements, determine size and effect of commercial and subsistence harvest on various stocks of king and chum salmon plus relate collected data to long-term trends in the salmon stocks evaluating management procedures needed to maintain them at their level of maximum yield. Acquire necessary population dynamics, life history and other pertinent sheefish information incidental to salmon studies.

c. results: A summer chum salmon population estimate was conducted in the Yukon River during 1971 utilizing tag-recovery methods. Calculations based on a simple Peterson type estimate indicated an escapement past the tagging site of 894,426 chums and a total Yukon River run of 1,560,157 summer chum salmon for the period of June 22 to July 23.

The king and chum salmon runs were sampled at various locations for age, sex and size information. Age of the king salmon sample consisted of 3_2 (0.1%), 4_2 (4.6%), 5_2 (35.6%), 6_2 (58.9%) and 7_2 (0.8%) fish with a 1:1 sex ratio. The summer chum salmon catch sample was comprised of age 3_1 (0.5%), 4_1 (59.9%), 5_1 (39.5%) and 6_1 (0.1%) fish with a 1:1 sex ratio. The fall chum sample was represented by 3_1 (1.4%), 4_1 (96.9%) and 5_1 (1.7%) fish with a nearly 1:1 sex ratio.

Table 1. (continued) Summary of special projects conducted in the Arctic-Yukon-Kuskokwim area by the Division of Commercial Fisheries, 1971.

The overall mean length for fall chums was 5.1% greater than that of summer chum salmon.

Subsistence catches of chum salmon were below the previous 10 year total average. Aerial suveys were conducted on selected streams of the Yukon and Teslin river systems. Exploratory surveys located a suitable salmon counting tower site on the Anvik River.

7. Anvik River Counting Tower

a. location: Anvik River (specific site selection dependent on reconnaissance surveys)

b. objectives: explore river for suitable counting tower site, determine daily and seasonal timing and magnitude of the king, chum and pink salmon runs if time allows plus determine age, sex and size structure of spawned out king and chum salmon.

c. results: Exploratory surveys conducted during early July located a suitable salmon counting tower site on the Anvik River. Lateness of the season and rising, turbid waters, the result of heavy rains, precluded any significant counting. A preliminary count conducted on July 24 during the hours of 1600-2200 indicated 300 chum and 5 king salmon per hour were migrating past the tower.

During July 27-29, a salmon carcass survey was conducted by boat from the Swift River to the village of Anvik. A total of 2,673 chum carcasses was enumerated and 8 tag recoveries were obtained for a tagged:untagged ratio of 334:1.

8. Kotzebue Sheefish Investigations

a. location: Upper Kobuk River and Selawik areas.

b. objectives: determine movements and distribution of Selawik and Kobuk River sheefish, also to obtain various life history information and estimation of spawning populations.

c. results: a total of 412 sheefish were tagged in the Upper Kobuk River. The estimated 1971 sheefish spawning population of the upper Kobuk River is 12,648. Results from tag and recovery studies made during recent years indicate that Kobuk River and Selawik River populations intermingle in wintering areas, especially in Selawik Lake. Considerable age and growth information, including age of maturity, has been obtained.

9. Upper Yukon River Salmon Investigations

a. location: upper Yukon River from Ruby to Fort Yukon including

Table 1. (continued) Summary of special projects conducted in the Arctic-Yukon-Kuskokwim area by the Division of Commercial Fisheries, 1971.

Koyukuk and Tanana Rivers.

b. objectives: obtain accurate commercial catch information in addition to collecting age, sex and size data and tag recoveries; distribute information regarding licensing and regulations.

c. results: a temporary F.B. I, stationed in Fairbanks, made several trips during the season to important villages in the area. The commercial catch consisted of 1,749 kings, 38 cohos and 1,061 chums. Several hundred king and chum salmon were sampled for age, sex and size data.

10. Commercial Salmon Catch Sampling

a. various locations: in all districts.

b. objectives: obtain age, sex and size information for commercially caught fish.

c. results: several thousand samples of all species were taken in 1971. This information has been tabulated and analyzed and will be presented in subsequent separate reports.

11. Kuskokwim River Whitefish Investigations

a. location: Kuskokwim River drainage.

b. objectives: determine whitefish taxonomy, movements, locations of spawning areas and age, sex and size compositions of various populations.

c. results: a report is being prepared in which all tagging and age, sex and size studies will be summarized; taxonomic studies indicate the need for a standardized method of collecting meristical count data to distinguish species and stocks of whitefish.

AREA SUMMARY, 1971

Commercial Fishery

Table 2 presents commercial catches by district for the 1971 season. The total area catch included 158,037 kings, 6,054 reds, 25,336 cohos, 4,908 pinks and 675,425 chums totaling 869,760 salmon.

Appendix Table 1 compares the area commercial catches during the 1960-1971 period. The 1971 harvest of chum salmon and all species combined was the greatest and second greatest respectively ever recorded.

Table 3 is a list of 1971 buyers and processors, showing associated processing information for each.

During 1971 approximately $1,455,220 was paid to fishermen for salmon deliveries. Wages earned by processing plant employees, tenderboat operators, etc., added another estimated $543,710 to the economy of the area.

Subsistence Fishery

In 1971 a minimum total of 71,342 kings and 399,445 other salmon, mostly chums, were taken by 1,336 fishing families. Table 2 shows subsistence catches by district for 1971 and Appendix Table 1 compares area catches made during the 1960-1971 period.

Total Utilization

A minimum total of 1,340,547 salmon of all species was harvested by both commercial and subsistence fishermen in 1971. This was the third largest utilization recorded for the 1960-1971 period.

Table 2. Arctic-Yukon-Kuskokwim area total salmon catch by district, 1971.

	Kings	Reds	Cohos	Pinks	Chums	All species
Kuskokwim:						
Commercial	44,936	6,054	10,006	13	99,423	160,432
Subsistence	45,465	526	8,443	343	121,017	175,794
Subtotal	90,401	6,580	18,449	356	220,440	336,226
Yukon:						
Commercial	110,507		12,203		289,684 1/	412,394
Subsistence	24,820				201,633 1/	226,453
Subtotal	135,327		12,203		491,317	638,847
Norton Sound:						
Commercial	2,593		3,127	4,895	131,362	141,977
Subsistence	1,026		4,097	10,863	21,815	37,801
Subtotal	3,619		7,224	15,758	153,177	179,778
Port Clarence:						
Commercial						
Subsistence	31	850	959	1,171	3,769	6,780
Subtotal	31	850	959	1,171	3,769	6,780
Kotzebue						
Commercial	1				154,956	154,957
Subsistence					23,959	23,959
Subtotal	1				178,915	178,916
Grand total for A-Y-K Area						
Commercial	158,037	6,054	25,336	4,908	675,425	869,760
Subsistence	71,342	1,376	13,499	12,377	372,193	470,787
Total	229,379	7,430	38,835	17,285	1,047,618	1,340,547
Totals, 1970	235,510	13,242	96,575	119,955	1,208,241	1,673,523
Totals, 1969	214,606	10,490	179,774	107,348	852,769	1,364,987
Totals, 1968	201,319	6,572	177,014	185,815	666,172	1,236,892

1/ Mostly chum salmon but includes some red, coho and pink salmon.

Table 3. 1971 Arctic-Yukon-Kuskokwim area processors and associated data.

Commercial operator	Product	Average price paid to fishermen (estimated)	District
Kotzebue Sound Area Fishery Co-op Box 270 Kotzebue, Alaksa	Fresh salmon Fresh sheefish, char	.16 per lb. .15 per lb.	Kotzebue
Hansons Trading Co. Box 47 Kotzebue, Alaska	Fresh sheefish Fresh char Fresh whitefish	.20 per lb. .30 per lb. .25 per lb.	Kotzebue
Peninsula Fisheries Co. 1402 K Street Anchorage, Alaska	Frozen salmon Kings Cohos Pinks Chums	 .25 per lb. .14 per lb. .07 per lb. .10 per lb. (Norton Sd.) .12 per lb. (Kotzebue)	Norton Sound and Kotzebue
Northern Commercial Co. Nome, Alaska	Fresh & frozen salmon Chums	 .16 per lb.	Norton Sound
Northern Commercial Co. Unalakleet, Alaska	Fresh & frozen char	.35 per lb.	Norton Sound
Raymond Accola 6 1/2 Mi. Steese Hwy. Fairbanks, Alaska	Fresh salmon Kings	 .35 per lb. (dressed wt.)	Yukon Subdistrict 4
Northern Commercial Co. 419 Colman Building Seattle, Washington	Mild cured, hard salt & frozen Kings Chums Salmon roe	 .24 per lb. .60 each	Yukon Subdistrict 1
Peter E. Merry 1206 Coppet Fairbanks, Alaska	Fresh king salmon	.35 per lb. (dressed wt.)	Yukon Subdistrict 4

Table 3. (continued) 1971 Arctic-Yukon-Kuskokwim area processors and associated data.

Commercial operator	Product	Average price paid to fishermen (estimated)	District
John Amukon Scammon Bay, Alaska	Hard salt kings	4.75 each	Yukon Subdistrict 1
Yukon Delta Fish Marketing Co-op, Inc. Emmonak, Alaska	Frozen Kings Cohos Chums Salmon roe	 .23 per lb. .12 per lb. .10 per lb.	Yukon Subdistrict 1
Les Fickes Box 2618 Fairbanks, Alaska	Fresh king salmon	.50 per lb. (dressed wt.)	Yukon Subdistrict 4
Felix Rasmus 1705 Southern Fairbanks, Alaska	Fresh salmon Kings Chums	 1/	Yukon Subdistrict 4
Barbara J. Carson Box 61 Nenana, Alaska	Salmon roe	1/	Yukon Subdistrict 4
Mountain Village Fish Co. Mountain Village, Alaska	Canned 1/2# flats Kings Chum Hard salt kings Salmon Roe	 .24 per lb. .50 each .24 per lb.	Yukon Subdistricts 1 & 2
Glenn Miller 226 Northward Bldg. Fairbanks, Alaska	Fresh king salmon	.30 per lb. (dressed wt.)	Yukon Subdistrict 4
Point Adams Packing Co. Hammond, Oregon	Mild cure king salmon Frozen salmon Chums Salmon Roe	.23 per lb. .10 per lb.	Yukon Subdistrict 1

Table 3. (continued) 1971 Arctic-Yukon-Kuskokwim area processors and associated data.

Commercial operator	Product	Average price paid to fishermen (estimated)	District
Paul Beard Tanana, Alaska	Fresh king salmon Salmon Roe	.30 per lb. (dressed wt.)	Yukon Subdistrict 4
Bering Sea Fisheries, Inc. Rt. 2, Box 252 Everett, Washington	Frozen salmon (in round) and canned (1# talls) Kings Chums Cohos Salmon Roe	 .23 per lb. .10 per lb. .12 per lb.	Yukon Subdistrict 1 Norton Sound Subdistrict 5
Arnold Akers Chuloonawick, Alaska (via Kotlik, Alaska)	Mild cure and fresh salmon Kings Chums Cohos Salmon Roe	 .23 per lb. .09 per lb. .12 per lb.	Yukon Subdistrict 1
Yukon Fish Co. Healy, Alaska	Fresh king salmon	1/	Yukon Subdistrict 1
Clark Fishing Enterprises Box 517 Aniak, Alaska	Fresh dressed Kings	 4.00 each	Yukon Subdistrict 3 Kuskokwim Subdistrict 2
J. Bruce Crow & Sons Box 37 Bethel, Alaska	Fresh dressed Kings Red Coho Chum Whitefish Salmon Roe	 4.76 each .68 each .75 each .50 each .32 each	Kuskokwim Subdistricts 1 & 2
Goodnews Bay Cooperative, Inc. Fisheries Division Goodnews Bay, Alaska	Fresh King Red Chum	 3.69 each 1.02 each .32 each	Kuskokwim Subdistrict 5

Table 3. (continued) 1971 Arctic-Yukon-Kuskokwim area processors and associated data.

Commercial operator	Product	Average price paid to fishermen (estimated)	District
Kuskokwim Fishermen's Cooperative, Inc. Bethel, Alaska	Frozen		Kuskokwim Subdistrict 1
	King	4.58 each	
	Red	.50 each	
	Coho	.79 each	
	Chum	.47 each	
	Fresh		
	Salmon roe		
Kuskokwim Packing Co., Inc. 1844 Westlake N. Seattle, Washington	Mildcure		Kuskokwim Subdistrict 1
	Kings	4.93 each	
	Fresh dressed		
	King	4.76 each	
	Red	.50 each	
	Coho	.75 each	
	Chum	.50 each	
	Caviar		
	Salmon roe		
John Samuelson Bethel, Alaska	Cured		Kuskokwim Subdistrict 1
	King	1/	
	Fresh dressed		
	King	5.00 each	
Schenk Seafood Sales, Inc. 1680 Toad Lake Road Bellingham, Washington	Fresh dressed		Kuskokwim Subdistrict 1
	King	4.60 each	
	Red	.50 each	
	Chum	.50 each	
	Cured		
	Salmon roe		

Table 3. (continued) 1971 Arctic-Yukon-Kuskokwim area processors and associated data.

Commercial operator	Product	Average price paid to fishermen (estimated)	District
Theodore Seafoods, Inc. 2340 W. Newton Seattle, Washington	Frozen		Kuskokwim Subdistricts 1, 4 & 5
	King	1.77 each	
	Red	.90 each	
	Coho	.90 each	
	Chum	.50 each	
	Fresh		
	Salmon roe		
Northern Commercial Co. Bethel, Alaska	Frozen		Kuskokwim Subdistrict 1
	King	5.01 each	
	Coho	1.00 each	
	Chum	.76 each	
Whitney Fidalgo Seafoods	Frozen		Kuskokwim Subdistrict 2
	King	5.67 each	
	Chum	.50 each	
	Red	.50 each	

1/ Information not available

Appendix Table 1. Arctic-Yukon-Kuskokwim total salmon catch, 1960-1971.

Year	Commercial catch						Subsistence catch		
	King	Red	Coho	Pink	Chum	Total	King	Other salmon[1/]	Total
1960	73,560	5,649	5,498			84,707	19,457	337,067	356,524
1961	148,741	2,308	21,752	34,443	109,657	316,901	52,617	593,115	645,732
1962	122,907	10,415	45,094	37,666	412,168	628,250	33,506	622,858	656,364
1963	142,185	38	37,994	56,031	209,234	445,482	67,271	593,584	660,855
1964	116,835	13,548	31,536	14,511	234,415	410,845	54,235	757,734	811,969
1965	144,512	1,886	14,571	220	104,388	265,577	45,376	800,371	845,747
1966	120,692	1,137	47,994	13,177	186,016	369,016	63,576	473,926	537,502
1967	161,496	654	71,646	29,052	128,329	391,177	81,832	600,306	682,138
1968	150,728	5,884	174,490	146,997	162,661	640,760	50,591	545,541	596,132
1969	157,392	10,362	132,290	88,248	384,367	772,659	57,214	535,114	592,328
1970	147,204	12,654	78,913	92,330	673,988	1,005,089	88,306	580,128	668,434
1971	158,037	6,054	25,336	4,908	675,425	869,760	71,342	399,445	470,787

Year	Total catch					
	King	Red	Coho	Pink	Chum[2/]	Total
1960	93,017	5,649	5,498		337,067	441,231
1961	201,358	2,308	21,752	34,443	702,772	962,633
1962	156,413	10,415	45,094	37,666	1,035,026	1,284,614
1963	209,456	38	37,994	56,031	802,818	1,106,337
1964	171,070	13,548	31,536	14,511	992,149	1,222,814
1965	189,888	1,886	14,571	220	904,759	1,111,324
1966	184,268	1,137	47,994	13,177	659,942	906,518
1967	243,328	654	71,646	29,052	728,635	1,073,315
1968	201,319	5,884	174,490	146,997	708,202	1,236,892
1969	214,606	10,362	132,290	88,248	919,481	1,364,987
1970	235,510	13,242	96,575	119,955	1,208,241	1,673,523
1971	229,379	7,430	38,835	17,285	1,047,618	1,340,547

1/ Majority are chum salmon but some red, coho and pinks.

2/ Subsistence catch of "other salmon" included under total chum salmon catch.

YUKON DISTRICT

DISTRICT AND SUBDISTRICT BOUNDARIES

This district includes all waters of the Yukon River and its tributary streams and all coastal waters from Cape Stephens, including Stuart Island, southward to 62° North Latitude (Figure 1). The Yukon River is the largest river in the state and is the fifth largest in North America. It originates in British Columbia, Canada, within 30 miles of the Gulf of Alaska and flows over 2,300 miles to its mouth on the Bering Sea draining an area of approximately 330,000 square miles. With the possible exception of a few fish taken at the mouth or adjacent coastal villages, only salmon of Yukon River origin are harvested in this district.

The present subdistrict boundaries were established in 1961 and 1962. The commercial fishing area is divided into four subdistricts for management and regulatory purposes: subdistrict 334-10 (mouth to Anuk River including Black River); subdistrict 334-20 (Anuk River to Owl Slough near Marshall); subdistrict 334-30 (Owl Slough to the mouth of the Koyukuk River); and subdistrict 334-40 (the remaining drainage above the Koyukuk River). These subdistricts are further subdivided into statistical areas for management and research purposes (Figures 2 and 3).

COMMERCIAL FISHERY

Introduction

The first recorded commercial salmon harvest in the district dates back to 1903 when 70,000 pounds of king and chum salmon were taken in Yukon Territory, Canada. A small commercial fishery for these species still exists in Yukon Territory, primarily at Dawson.

The first recorded commercial salmon harvest in Alaska was in 1918 when Carlisle Packing Company operated a floating cannery at Andreafsky (now St. Marys). Relatively large catches of king, coho and chum salmon were made during the first four years of this fishery (Appendix Table 19). Since restrictions were placed only on commercial fishing inside the river's mouth, a majority of the catch was made in "outside" waters. Because of the existence of a large upriver subsistence fishery, the early commercial fishery met considerable opposition and was closed completely during 1925-1931. Commercial fishing for king salmon was resumed at a much lower level in 1932, and this species has been taken commercially each year

since then. Since 1922 commercial catches of chum and/or coho salmon have been made only during 1952, 1956 and since 1961.

Since the 1950's commercial salmon fishing has been permitted only upstream from the mouth of the Yukon and Black Rivers. During the 1954-1960 period, a 65,000 king salmon quota was in effect for the river. Of this total not more than 50,000 could be taken below the mouth of the Anuk River, 10,000 in the area between the mouths of the Anuk and Anvik Rivers and 5,000 above the Anvik River. During these years, fishing was allowed for five and one-half days a week until the specific quotas were obtained.

King salmon catch quotas were eliminated for subdistricts 334-10 and 334-20 in 1961 and these fisheries have been regulated by scheduled weekly fishing periods since then. The king salmon season in these two subdistricts opens June 1 and is closed by emergency order by late June or early July depending on the timing and magnitude of the runs. Fishing time during this season was allowed for four days a week during 1961-1967, but was reduced to three and one-half days a week beginning in 1968. This was done to insure that adequate king salmon escapements would be realized in the face of increasing fishing effort and efficiency.

Commercial fishing in subdistrict 334-30 is allowed for a total of four days a week until quotas of 3,000 king and 3,000 chum and coho salmon combined are taken. In subdistrict 334-40 fishing is allowed seven days a week until quotas of 2,000 king and 2,000 chum and coho salmon combined are taken. These quotas have been established for the purpose of allowing a very limited commercial utilization which traditionally has occurred for many years.

Since 1961 commercial fishing for four days a week has been reopened in subdistrict 334-10 when buyers have been available. This season is referred to as the "fall season" and primarily fall chum and coho salmon are taken. Opening dates for the fall season have ranged from July 11 to August 3 and the season ends in late August or early September when buyers terminate their operations. The mid-season closure during July and often including late June is for the purpose of insuring an adequate supply of summer chum salmon for upriver subsistence fishermen.

Excluding the 1920's, the sale of other species of salmon captured during the king salmon season in the area of the present lower two subdistricts has been allowed only since 1967. The incidental catch of summer chum salmon is limited during this season as most gill nets must have stretched mesh sizes of eight inches or greater. However, beginning in 1970 each fisherman could substitute up to 50 fathoms of gill net of any mesh size in subdistricts 334-10 and 334-20.

Set gill nets, drift gill nets and fishwheels are legal forms of commercial fishing gear. Set gill nets in use by any individual fisherman cannot exceed 150 fathoms in length and drift gill nets cannot exceed 50 fathoms. Set gill nets are most commonly used, especially near the river mouth, but the use of drift gill nets is increasing each season. Most fishermen operate small outboard powered skiffs of 16 to 20 feet in length

and do not use gill net rollers, power reels, etc., of any type. Finally, subsistence fishing is prohibited during the closed fishing periods of the commercial fishing seasons in the lower two subdistricts.

Appendix Table 21 presents commercial catches for each subdistrict since 1960.

1971 District Summary

In 1971 there were 110,507 kings; 12,203 cohos; and 289,684 chums totaling 412,394 salmon taken commercially (Table 15). This was the third largest harvest ever recorded for chum salmon and also for all species combined (Appendix Table 19).

A record total of 715 commercial, 633 vessel, 571 set gill net and 295 drift gill net licenses were issued for the district in 1971. Fishing vessel registration increased approximately 15 percent over the previous high recorded in 1967 (Appendix Table 20). Much of this increase in license registration occurred in subdistricts 334-10 and 334-40.

The above license totals do not include 14 commercial and 21 vessel licenses issued for fish tendering purposes throughout the district and 24 fishwheels that were operated in subdistrict 334-40 (gear licenses are not required for fishwheels). Table 17 shows the residency of all persons issued commercial fishing licenses for 1971. The vast majority of the commercial fishermen are Eskimo and Indian residents of the Yukon River drainage.

The majority of the king salmon catch was handled by either mild cure-hard salt or fresh frozen processors. Production of canned king salmon was at a very low level as only two small canneries operated in the lower river. The majority of the chum and coho salmon were frozen by four floaters and one small shore plant. Production of salmon roe nearly doubled in 1971 compared to the previous year (Appendix Table 24). Table 3 includes all buyers and processors that operated in the Yukon district during 1971.

Yukon district commercial fishermen received about $783,000 for their catches. In addition, a minimum of $357,700 in wages was estimated to have been earned by processing plant employees and tenderboat operators. The latter figure was obtained from information supplied by a majority of the buyers and processors. The first wholesale value of the 1971 pack was estimated at $2,106,600 (Appendix Table 25).

Appendix Tables 26 and 27 show mean fish prices and mean salmon weights respectively for 1960-1971. Average size of king salmon in 1971 was comparatively small due to a moderate return of five year old fish (versus six year olds).

King Salmon Season: Under the new regulations established by the Department since 1961, the annual king salmon catch has averaged 104,929 compared to 63,023 for the previous nine-year period (1952-1960), an increase of about 65 percent (Appendix Table 19). The 1971 catch of 110,507 king salmon was the largest in the past four seasons and was 6,136 fish above the previous ten-year average. The greatest catch ever made in the district was 129,706 king salmon taken in 1967.

The 1971 catch data presented in this report does not include king and chum salmon taken commercially by Canadian commercial fishermen in Yukon Territory.

Table 18 shows the king salmon catches (and incidental chum salmon catches) made in each subdistrict and statistical area during the 1971 king salmon season. Tables 20 through 22 present daily catch data for the lower three subdistricts. Daily catch data for 334-40 are not shown.

All data indicate the 1971 run was one of the largest runs experienced since 1960. Average king salmon catches per boat hour (king salmon season) of 1.15 and 0.96 for subdistricts 334-10 and 334-20 respectively, were the greatest since 1964. The seasonal catch per boat hour for subdistrict 334-30 is given, but is not sufficiently reliable to indicate relative salmon abundance from year to year (Appendix Table 22).

Entry of the run into the river was at least 7-10 days later than usual. This probably was influenced by below average water temperatures in the Bering Sea (as reported by offshore research vessels). A late breakup of the river ice--the lower Yukon was not ice free until about June 5--was also probably a contributing factor.

The first reported king salmon catches were made on June 11 in the south mouth (Sunshine Bay), June 13 at Mt. Village and Pitkas Point, June 14 at Marshall, June 28 at Tanana, June 30 at Rampart, July 4 at Nenana and July 11 at Eagle The commercial catches in subdistrict 334-10 increased steadily with each successive fishing period culminating in a peak harvest of 34,600 kings during June 28-30. This exceeded the previous record catch in a single fishing period by 7,600 fish. Processing plants were glutted with salmon during this time and it is estimated that in excess of 4,000 king salmon taken during June 28-30 spoiled and were discarded.

The large runs that entered the lower river during June 28-30 produced excellent upriver catches in subdistrict 334-20 during July 1-3. The single processing plant in this subdistrict also became glutted with fish and, as a result, it is estimated that in excess of 1,000 kings were dumped.

Catches declined markedly during the July 1-3 fishing period in subdistrict 334-10 and this fishery was closed by emergency order effective 6 p.m., July 3. The subdistrict 334-20 fishery was closed by emergency order effective 6 p.m., July 5. The 3,000 quota in subdistrict 334-30 was exceeded and the fishery was closed by emergency order effective 12:00 noon, July 6. The quota for subdistrict 334-40 was never exceeded.

The decision to close the "king salmon seasons" in the lower two subdistricts was due to adherence of a harvest goal of approximately 105,000

king salmon adopted in 1970. This figure represents the average commercial catch for 1961-1970 and is thought to insure adequate spawning escapements during most seasons. Also, appreciable numbers of king salmon entering the river after the first week of July had never been documented. Even when the run did not begin until as late as June 15 in 1964, the bulk of the fish had entered the river by July 4.

As indicated by Department test net catches in the south mouth, the largest run during the season occurred on July 10. It was reported that king salmon were abundant in the other mouths during this time as well. This unprecedented late run received only limited utilization by subsistence fishermen and a few commercial fishermen in subdistrict 334-40. It no doubt made a very significant contribution to spawning escapements. Based on test fishing catches, it is estimated that about one-third of the south mouth run occurred after the closure of the 334-10 "king salmon season."

Chum and Coho Salmon: Tables 20 , 21 and 22 also present commercial catch data by fishing period for these species. The 1971 chum salmon harvest of 289,684 exceeded the previous 10 year average by 204,296 fish. The 1971 coho salmon harvest of 12,203 was only average, exceeding the previous 10 year average by 1,705 fish (Appendix Table 19).

The large chum catch was a result of several factors including a large run, greater fishing effort and increased processing and tendering facilities available for this species in recent years. Also, the increased harvest in recent years reflects the gradual relaxation of fishing restrictions due to the decline in the dependence upon subsistence fishing for chum salmon.

The chum catch included 42,239 taken during the king salmon season in the lower three subdistricts. Previous catches for these subdistricts and fishery have ranged between 10,919 (1967) to 104,705 (1970). Because of the large king salmon run, many chums captured during the king salmon season were not purchased. Also, an unknown large number of chums that were purchased spoiled and had to be discarded due to the serious glut problem described previously. Relatively few fishermen in 1971 took advantage of the new regulation allowing the substitution of up to 50 fathoms of gill net of any mesh size, but those that did made excellent catches.

Entry of summer chum salmon into the river was also delayed. The first chum salmon was taken on June 15 near the mouth. Peak commercial catches during the king salmon season occurred during the period June 28-30. Test fishing catches at Flat Island indicated two peaks in run timing: June 25 and July 10-12. The catches made during the latter period may have been composed of a substantial portion of early fall chums.

The subdistrict 334-10 fishing season was reopened by emergency order effective 6 p.m. July 12 with a weekly fishing period of four days per week. This season--referred to locally as the "fall season"--lasted through September 4 when the processors terminated operations. During this season 246,194 chums were taken in addition to 1,645 kings and 12,165 cohos (Tables 19 and 20). Based on catch per unit effort data, the chum run during the fall season was smaller than 1969 and 1970 but above average when compared to previous seasons (Appendix Table 23). Fishing effort in terms of vessel hours was the greatest ever recorded.

Enforcement

Observed violations and violation citations issued increased over previous years. Common violations included fishing during closed periods (especially during the "fall season") and fishing outside boundary markers in the south mouth. Approximately 20 violation notices were issued, all as a result of observations or personal contact by biologists of the Division of Commercial Fisheries.

SUBSISTENCE FISHERY

Comprehensive annual surveys of the Yukon River subsistence salmon fishery were initiated by the Department in 1961, but the data obtained cannot be easily compared with that of earlier seasons. The methods and coverage of these earlier surveys were not documented and their accuracy cannot be determined.

Methods used to survey the Yukon subsistence fishery and treatment of this data is very similar to that previously described for the Kuskokwim district. Since 1961 the Department has annually surveyed all fishermen along the main river in Alaska including the Tanana River as far upstream as the village of Nenana and the village of Venetie on the Chandalar River. Catch data from the Canadian portion of the drainage has been supplied by personnel of the Canadian Department of Fisheries since 1962. In recent years the Department has conducted surveys of Koyukuk River villages.

An estimated 24,820 king and 201,633 other species of salmon, mostly chums, were taken in the district during 1971. This harvest includes 65 king and 1,065 other salmon taken at Stebbins, a coastal village located several miles north of the Yukon River mouth. The Yukon River catch was taken from both the Alaskan and Canadian portions of the drainage. Table 23 presents 1971 catch data for each Yukon River community and Appendix Table 28 shows comparative Yukon River catch data for 1961-1971.

During the last few seasons, a greater attempt was made to contact all residents in all Yukon River communities. A total of 738 families were recorded in 1971, but only 479 had one or more members that were subsistence fishermen. There were 176 nonfishing families in addition to 83 families for which it was impossible to determine if they fished or not (Table 24).

Comparing catches from villages surveyed each year since 1961 ("Equivalent catches") the 1971 Yukon River king salmon harvest was 5,031 more fish than the previous 10 year average (Appendix Table 28). The king salmon harvest was considered excellent throughout the drainage.

For the sixth consecutive season, a relatively small catch of other salmon species, primarily chums, was taken from the river. Equivalent catches averaged 400,874 during 1961-1965, compared to an average of only 199,708 during 1966-1971, a decrease of 50 percent.

Permits are required for subsistence fishing in the upper Tanana River drainage upstream from Wood River. In 1971 34 permits were issued with 21 fishermen reporting catches of 98 king, 123 coho and 2,206 chum salmon. Eleven permitees did not fish and three others did not turn in catch reports.

From all indications the annual Yukon River subsistence salmon harvests for some years in the early 1900's and even as late as 1940 exceeded one million fish (Appendix Table 19). Recent declines in subsistence catches are not necessarily due to fish abundance but mainly reflect decreases in fishing effort and dependence due to a changing way of life.

To illustrate changes in effort, there were 393 fishwheels operated on the Yukon River in 1918. Fishwheels are very effective and each wheel is capable of taking from 2,000 to 5,000 chum salmon annually if fished properly. The number of fishwheels recorded during the 1970 survey was an all-time low of 56, a decrease of 200 percent since 1961. In 1961 each fishing family kept an average of 7.7 sled dogs, while in 1971 this figure was down to 4.4 sled dogs. Finally, the number of snowmachines owned by fishing families was documented beginning with the 1967 season when the average number of snowmachines per family was 0.41. In 1971 the average number of snowmachines per family increased to 0.97 (Appendix Table 28).

ESCAPEMENT

The Yukon River drainage (330,000 square miles) is too extensive for complete aerial survey coverage during any given season. In addition poor survey conditions have prevented surveys from being flown during some years, or have resulted in minimum counts. Table 25 presents aerial survey data for all surveys conducted in 1971.

Appendix Table 29 presents comparative king salmon escapement data for selected tributaries during the 1959-1971 period. Although turbid water conditions prevented surveys of some "index" streams, the data indicates a very strong 1971 escapement which reverses the relatively low counts made during the late 1960's.

In addition the 1971 king salmon spawning escapement was composed of an unusually high percentage of females. Studies conducted indicate a near 1:1 sex ratio. This is compared to an indicated sex ratio of 5-7 males:1 female in the 1970 spawning escapement.

Good comparative data is lacking for chum salmon escapements. The 1971 count of 169,840 for the Andreafsky River system is similar to the count of 175,300 made in 1970.

OUTLOOK FOR 1972

It is difficult to predict the relative magnitude of the 1972 Yukon River king salmon run. Comparative catch and escapement data of the 1966 brood year indicate that the magnitude of the run was relatively small.

However, it appears that environmental conditions were favorable during the winter of 1966-67 and that the resulting progeny of the 1966 escapement experienced good survival. For example, the 1970 and 1971 king salmon runs were composed of unusually high percentages of 1966 brood year fish which may indicate good survival and return of the dominant age 6_2 fish in 1972. In addition the contribution of age 5_2 fish to the 1972 run may be significant, but it is difficult to evaluate the 1967 parent escapement and resulting return. Overall, it is expected that the 1972 king salmon run will be average in magnitude and possibly larger.

However, if the 1972 run appears to be smaller than anticipated, then fishing time restrictions will be required during the season in order to obtain adequate spawning escapements. Also until future returns can be studied, the commercial harvest goal for Yukon River king salmon should not exceed 105,000 fish (the 1961-1971 average) unless an exceptionally large run is indicated.

There is little information on which to estimate the relative magnitude of the 1972 runs of chum and coho salmon. It is anticipated that the chum run will be average, or possibly larger, and the commercial harvest will total 300-400,000 fish depending on effort for summer chums. Present fall chum harvest levels appear to be approaching maximum sustained yield. Increases in the commercial chum salmon harvest should be directed toward the larger summer chum salmon run. A conservative estimate is that the summer chum run can withstand an annual commercial harvest of 150,000-300,000 fish. This would result in a catch of 90,000-240,000 additional summer chum salmon over the average harvest of 60,000 made during 1969-1971.

The coho salmon catch is expected to be average: 12-15,000 fish.

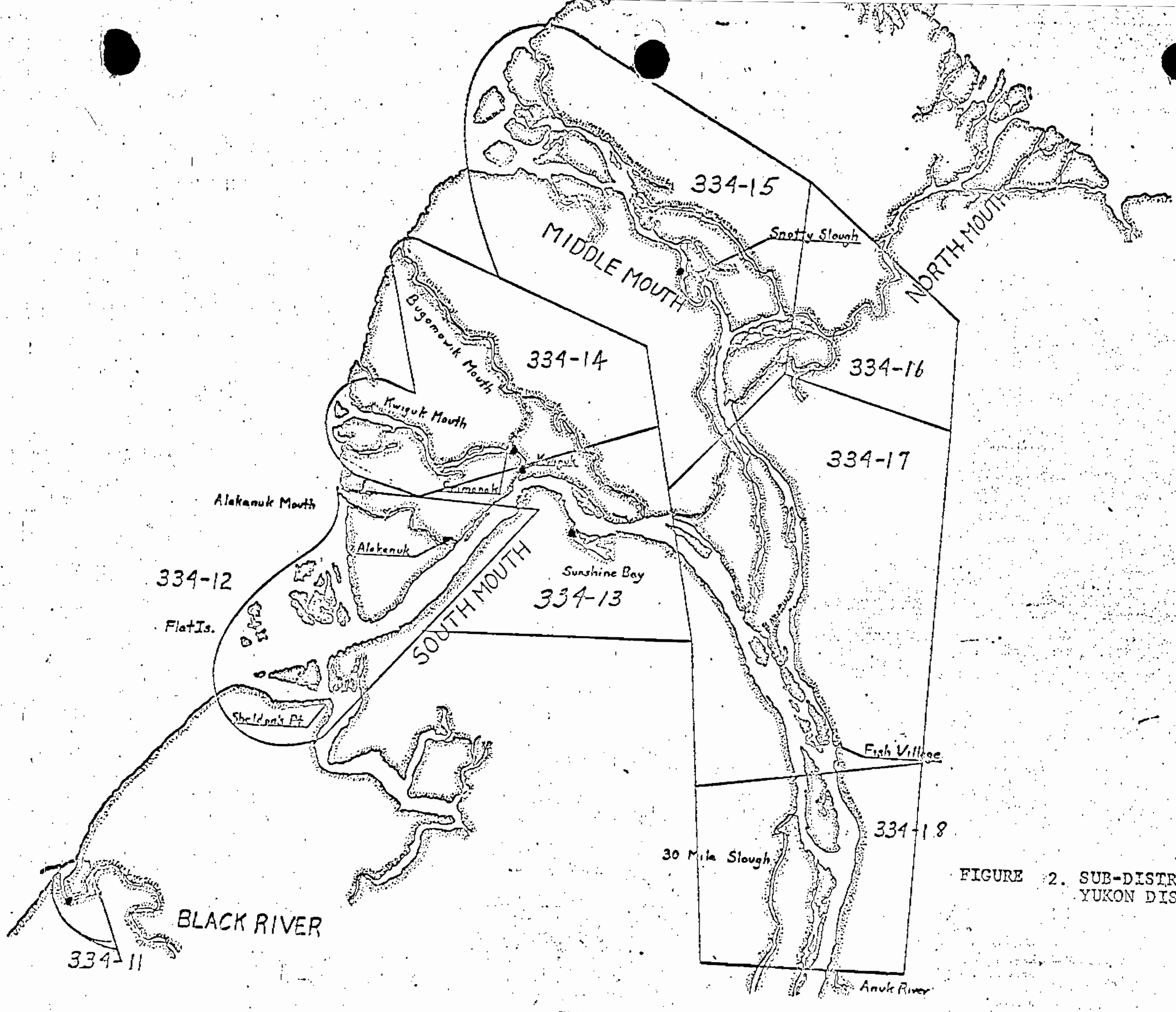

FIGURE 2. SUB-DISTRICT 334-10
YUKON DISTRICT

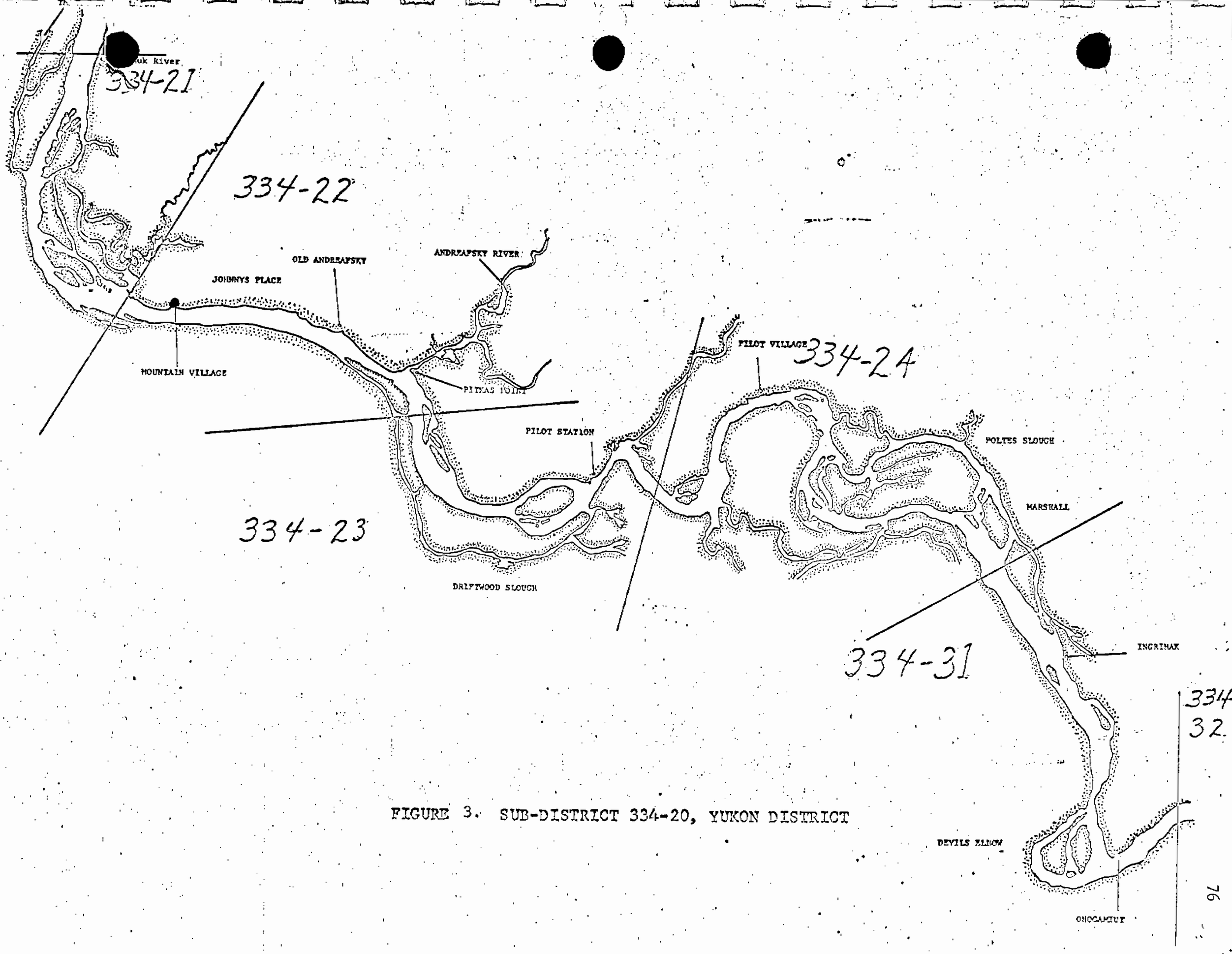

FIGURE 3. SUB-DISTRICT 334-20, YUKON DISTRICT

Table 15. Commercial salmon catches by species and subdistrict, Yukon district, 1971.

Subdistrict	Kings	Cohos	Chums	Total
334-10 (Mouth-Anuk River)				
King salmon season (6/10-7/3)	84,397	-	36,077	120,474
Fall season (7/12-9/4)	1,645	12,165	246,384	260,194
Total	86,042	12,165	282,461	380,668
334-20 (Anuk River-Owl Slough)				
King salmon season (6/18-7/5)	19,226	-	6,112	25,338
334-30 (Owl Slough-Koyukuk River)				
King salmon season (6/18-7/6)	3,490	-	50	3,540
334-40 (Above Koyukuk River)	1,749	38	1,061	2,848
Grand Total	110,507	12,203	289,684	412,394

Table 16. Commercial salmon catches by species, subdistrict and gear, Yukon district, 1971.

Subdistrict	Kings	Cohos	Chums
334-10			
Set gill net	74,913 (87.1%)	9,817 (80.7%)	219,864 (77.8%)
Drift gill net	11,129 (12.9%)	2,348 (19.3%)	62,597 (22.2%)
Subtotal	86,042 (100.0%)	12,165 (100.0%)	282,461 (100.0%)
334-20			
Set gill net	3,211 (16.7%)	-	854 (14.0%)
Drift gill net	16,015 (83.3%)	-	5,258 (86.0%)
Subtotal	19,226 (100.0%)	-	6,112 (100.0%)
334-30			
Set gill net	2,640 (75.6%)	-	50 (100.0%)
Drift gill net	850 (24.4%)	-	-
Subtotal	3,490 (100.0%)	-	50 (100.0%)
334-40			
Set gill net	929 (53.1%)	-	428 (40.3%)
Drift gill net	20 (1.1%)	-	-
Fishwheel	800 (45.8%)	38 (100.0%)	633 (59.7%)
Subtotal	1,749 (100.0%)	38 (100.0%)	1,061 (100.0%)
District 334			
Set gill net	81,693 (73.9%)	9,817 (80.4%)	221,196 (76.4%)
Drift gill net	28,014 (25.4%)	2,348 (19.3%)	67,855 (23.4%)
Fishwheel	800 (0.7%)	38 (0.3%)	633 (0.2%)
Total	110,507 (100.0%)	12,203 (100.0%)	289,684 (100.0%)

Table 17. Yukon district commercial fishing licenses issued by residence, 1971.

Residence	Initial subdistrict registration 334-10	334-20	334-30	334-40	Total--334
Sheldons Point	25				25
Alakanuk	94				94
Emmonak	105				105
Kotlik	54				54
Scammon Bay	31		1		32
Mekoryuk	9				9
Mountain Village	32	64			96
Stebbins	12				12
St. Marys	30	20			50
Pitkas Point	3	14			17
Pilot Station	17	46			63
Russian Mission	5		8		13
Holy Cross	3		16		19
Silverdale, WA	1				1
Homer	2				2
Anchorage	2			1	3
Shaktoolik	9				9
Hamilton	2				2
Fortuna Ledge	9	18	12		39
Marysville, WA	1				1
Everett, WA	2				2
Hooper Bay	5				5
Tuluksak	2				2
Bethel	2				2
Aleknagik	1				1
Seattle, WA	1				1
Fairbanks				17	17
Nenana				14	14
Tanana				8	8
Central				1	1
Ruby				3	3
Ft. Yukon				1	1
Rampart				7	7
Gakona				1	1
Stevens Village				2	2
College				1	1
Eagle				1	1
Totals	459	162	37	57	715

Table 18. Commercial salmon catches by statistical area, during king salmon season, Yukon district, 1971.

Statistical area	King	Coho	Chum
334-11	3,038		834
334-12	25,105		15,003
334-13	7,135		1,917
334-14	10,342		2,198
334-15	16,853		7,120
334-16	3,924		171
334-17	12,037		5,728
334-18	5,963		3,106
Subtotal 334-10	84,397		36,077
334-21	5,926		2,255
334-22	7,893		3,144
334-23	3,061		286
334-24	2,346		427
Subtotal 334-20	19,226		6,112
334-31	1,352		26
334-32	2,138		24
Subtotal 334-30	3,490		50
334-40	1,749		1,061
Subtotal 334-40	1,749		1,061
Total 334	108,862		43,300

Table 19. Commercial salmon catches by statistical area in subdistrict 334-10, during fall season, Yukon district, 1971.

Statistical area	King	Coho	Chum
334-11	-	-	-
334-12	574	4,117	72,737
334-13	69	1,966	22,849
334-14	234	1,680	32,693
334-15	287	1,164	33,497
334-16	25	240	7,892
334-17	409	2,100	61,907
334-18	47	898	14,809
Total	1,645	12,165	246,384

Table 20. Commercial salmon catches from subdistrict 334-10, Yukon district, drift and set gill nets combined, 1971.

Date of landing	Hours fished	No. of boats	Total catch (catch/boat hour) King	Coho	Chum	Cumulative catch King	Coho	Chum
6/10	6		0					
6/11	24		2			2		
6/12	18		26			28		
	48	5	28 (0.1)					
6/14	6		5			33		
6/15	24		397		26	430		26
6/16	6		756		7	1,186		33
	36	111	1,158 (0.3)		33 (+)			
6/17	6		169		135	1,355		168
6/18	24		1,426		145	2,781		313
6/19	18		2,313		655	5,094		968
	48	269	3,908 (0.3)		935 (0.3)			
6/21	6		1,023		88	6,117		1,056
6/22	24		8,669		1,937	14,786		2,993
6/23	6		3,389		891	18,175		3,884
	36	358	13,081 (1.0)		2,916 (0.2)			
6/24	6		1,738		710	19,913		4,594
6/25	24		9,219		3,981	29,132		8,575
6/26	18		11,607		4,674	40,739		13,249
	48	342	22,564 (1.4)		9,365 (0.6)			
6/28	6		1,484		489	42,223		13,738
6/29	24		16,203		7,179	58,426		20,917
6/30	6		16,910		8,046	75,336		28,963
	36	333	34,597 (2.9)		15,714 (1.3)			

Table 20. (continued) Commercial salmon catches from subdistrict 334-10, Yukon district, drift and set gill nets combined, 1971.

Date of landing	Hours fished	No. of boats	Total catch (catch/boat hour) King	Coho	Chum	Cumulative catch King	Coho	Chum
7/1	6		722		301	76,058		29,264
7/2	24		5,441		4,635	81,499		33,899
7/3	18		2,898		2,178	84,397		36,077
	48	309	9,061 (0.6)		7,114 (0.5)			
Subtotal[1/]	300	405	84,397 (1.2)		36,077 (0.5)			
7/12	6		114		1,723	114		1,723
7/13	24		363		9,823	477		11,546
7/14	18		526		21,402	1,003		32,948
	48	109	1,003 (0.2)		32,948 (6.3)			
7/15	6		12		1,923	1,015		34,871
7/16	24		107		16,317	1,122		51,188
7/17	18		54		6,663	1,176		57,851
	48	183	173 (+)		24,903 (2.8)			
7/19	6		6		77	1,182		57,928
7/20	24		61		2,239	1,243		60,167
7/21	18		111	2	5,977	1,354	2	66,144
	48	163	178 (+)	2 (+)	8,293 (1.1)			
7/22	6		2		568	1,356		66,712
7/23	24		53		11,069	1,409		77,781
7/24	18		67	20	11,982	1,476	22	89,763
	48	226	122 (+)	20 (+)	23,619 (2.2)			
7/26	6		5	0	271	1,481	22	90,034
7/27	24		23	6	1,889	1,504	28	91,923
7/28	18		42	10	3,584	1,546	38	95,507
	48	180	70 (+)	16 (+)	5,744 (0.7)			
7/29	6		4	0	1,146	1,550	38	96,653
7/30	24		15	23	8,111	1,565	61	104,764
7/31	18		11	42	6,657	1,576	103	111,421
	48	185	30 (+)	65 (+)	15,914 (1.8)			

Table 20. (continued) Commercial salmon catches from subdistrict 334-10, Yukon district, drift and set gill nets combined, 1971.

Date of landing	Hours fished	No. of boats	Total catch (catch/boat hour) King	Coho	Chum	Cumulative catch King	Coho	Chum
8/2	6		0	19	2,393	1,576	122	113,814
8/3	24		7	215	21,957	1,583	337	135,771
8/4	18		4	159	11,742	1,587	496	147,513
	48	207	11 (+)	393 (+)	36,092 (3.6)			
8/5	6		0	19	316	1,587	515	147,829
8/6	24		10	228	6,450	1,597	743	154,279
8/7	18		7	369	7,875	1,604	1,112	162,154
	48	187	17 (+)	616 (0.1)	14,641 (1.6)			
8/9	6		2	7	61	1,606	1,119	162,215
8/10	24		9	417	3,772	1,615	1,536	165,987
8/11	18		4	313	2,102	1,619	1,849	168,089
	48	170	15 (+)	737 (0.1)	5,935 (0.7)			
8/12	6		0	56	727	1,619	1,905	168,816
8/13	24		10	1,336	17,979	1,629	3,241	186,795
8/14	18		2	1,473	19,403	1,631	4,714	206,198
	48	172	12 (+)	2,865 (0.3)	38,109 (4.6)			
8/16	6		0	4	15	1,631	4,718	206,213
8/17	24		1	788	3,079	1,632	5,506	209,292
8/18	18		5	681	1,841	1,637	6,187	211,133
	48	150	6 (+)	1,473 (0.2)	4,935 (0.7)			
8/19	6		0	14	129	1,637	6,201	211,262
8/20	24		0	1,110	12,002	1,637	7,311	223,264
8/21	18		3	1,441	12,050	1,640	8,752	235,314
	48	122	3 (+)	2,565 (0.4)	24,181 (4.1)			
8/23	6		0	206	1,311	1,640	8,958	236,625
8/24	24		2	1,216	4,811	1,642	10,174	241,436
8/25	18		2	652	1,990	1,644	10,826	243,426
	48	125	4 (+)	2,074 (0.3)	8,112 (1.4)			
8/26	6			59	103		10,885	243,529
8/27	24			260	674		11,145	244,203

Table 20. (continued) Commercial salmon catches from subdistrict 334-10, Yukon district, drift and set gill nets combined, 1971.

Date of landing	Hours fished	No. of boats	Total catch (catch/boat hour) King	Coho	Chum	Cumulative catch King	Coho	Chum
8/28 21	18			439	685		11,584	244,888
	48	54		758 (0.3)	1,462 (0.6)			
8/30	6							
8/31 22	24			112	453		11,696	245,341
9/1	18		1	315	746	1,645	12,011	246,087
	48	15	1 (+)	427 (0.6)	1,199 (1.7)			
9/2	6							
9/3 23	24			66	131		12,077	246,218
9/4	18			88	166		12,165	246,384
	48	9		154 (0.4)	297 (0.7)			
Subtotal 2/	768	352	1,645 (+)	12,165 (0.1)	246,384 (2.3)			
Grand Total	1,068	473	86,042	12,165	282,461			

1/ King salmon season (6/10-7/3).
2/ Fall season (7/12-9/4).

Table 21. Commercial salmon catches from subdistrict 334-20, Yukon district, drift and set gill nets combined, 1971.

Date of landing	Hours fished	No. of boats	Total catch (catch/boat hour) King	Chum	Cumulative catch King	Chum
6/17	6					
6/18	24		405		405	
6/19	6		463		868	
	36	59	868 (0.4)			
6/20	6					
6/21	24		364		1,232	
6/22	18		1,610	10	2,842	10
	48	102	1,974 (0.4)	10 (+)		
6/24	6		7		2,849	10
6/25	24		1,087	153	3,936	163
6/26	6		809	139	4,745	302
	36	90	1,903 (0.6)	292 (0.9)		
6/27	6					
6/28	24		2,085	1,015	6,830	1,317
6/29	18		3,381	1,349	10,211	2,666
	48	102	5,466 (1.1)	2,364 (0.5)		
7/1	6					
7/2	24		4,868	2,418	15,079	5,084
7/3	6		2,715	750	17,794	5,834
	36	92	7,583 (2.3)	3,168 (1.0)		
7/4	6		468		18,262	5,834
7/5	18		964	278	19,226	6,112
	24	62	1,432 (1.0)	278 (0.2)		
Grand Total	228	154	19,226 (1.0)	6,112 (0.3)		

Table 22. Commercial salmon catches from subdistrict 334-30 Yukon district, drift and set gill nets combined, 1971.

Date of landing	Hours fished	No. of boats	Total catch (catch/boat hour) King	Total catch (catch/boat hour) Chum	Cumulative catch King	Cumulative catch Chum
6/18	18		28		28	
	18	2	28 (0.8)			
6/21	6		--		28	
6/22	24		234		262	
6/23	24		145		407	
6/24	24		288	3	695	3
6/25	18		353	3	1,048	6
	96	28	1,020 (0.4)	6 (0.0)		
6/28	6		23		1,071	6
6/29	24		380		1,451	6
6/30	24		445		1,896	6
7/1	24		450		2,346	6
7/2	18		543	44	2,889	50
	96	22	1,841 (0.9)	44 (0.0)		
7/5	6		--		2,889	50
7/6	12		601		3,490	50
	18	13	601 (0.4)			
Total	228	33	3,490 (0.7)	50		

Table 23. Yukon River subsistence salmon catch data, 1971 (includes Canadian catches).

Village	Date of survey	Fishing families	Dogs[1]	Snow-machines[1]	Kings	Other salmon[2]	Total salmon	Units of Gear: 5 1/2" nets	Units of Gear: 8 1/2" nets	Units of Gear: Fish-wheels
Sheldon's Point	8/1	15	44	13	731	1,680	2,411	26	14	0
Alakanuk	8/3	51	76	60	986	6,716	7,702	93	23	0
Emmonak	8/4	39	37	47	543	4,370	4,913	74	0	0
Aproka Pass & vicinity	8/7	1	3	1	2	541	543	2	0	0
Kotlik	8/8	26 (132)	29	27	315 (2,000)	4,583	4,898	53	3	0
Mt. Village & vicinity	8/9	35	62	40	1,648	6,649	8,297	46	10	0
Pitkas Point	8/11	10	36	7	346	3,561	3,907	12	1	0
St. Marys	8/12-13	32	92	35	1,352	7,988	9,340	41	15	0
Pilot Station	8/11	20	66	22	1,120	5,058	6,178	20	28	0
Marshall	8/17	23 (120)	113	18	819 (5,285)	5,455	6,274	33	14	0
Russian Mission	8/18	14	50	13	849	2,378	3,227	15	8	0
Holy Cross	8/20	11	23	7	2,799	2,203	5,002	9	18	0
Anvik	8/22	9	33	10	137	7,309	7,446	6	1	4
Grayling	8/22	18	79	17	394	6,537	6,931	14	0	4
Kaltag	8/24	17	111	17	131	9,133	9,264	16	0	3
Nulato	8/25	24	282	18	418	16,337	16,755	30	0	3
Koyukuk	8/26	12	81	4	410	3,125	3,535	11	0	0
Galena	8/27	8	58	9	574	4,710	5,284	8	1	2
Ruby	8/28	14	105	14	2,275	12,328	14,603	6	1	6
Tanana	8/31	12	177	8	609	21,663	22,272	1	4	8
Rampart	9/5	8	31	1	1,071	10,291	11,362	2	5	4
Stevens Village	9/5	2	15	1	450	4,774	5,224	2	0	1
Beaver	9/5	7	50	7	680	1,636	2,316	7	0	0
Fort Yukon	9/5	10	114	12	647	3,207	3,854	0	0	10
Eagle		1			111	490	601	1	1	0
Pelly[3]					450		450			
Carmacks[3]					1,400		1,400			
Whitehorse-Laberge[3]					180		180			
Kluane River[3]						100	100			
Mayo-Stewart River[3]					250		250			
Johnson's Crossing (Teslin)[3]					80		80			

Table 23. (continued) Yukon River subsistence salmon catch data, 1971 (includes Canadian catches).

Village	Date of survey	Fishing families	Dogs[1]	Snow-machines[1]	Kings	Other salmon[2]	Total salmon	Units of Gear: 5 1/2" nets	Units of Gear: 8 1/2" nets	Units of Gear: Fish-wheels
MAIN RIVER TOTALS		419+	1,757+	408+	21,777	152,822	174,599	528+	147+	45+
Huslia		2	4	2	2	652	654	3	0	0
Hughes		10	66	5	315	14,084	14,399	16	2	0
Alatna		1	11	1		496	496	2	0	0
Allakaket		11	69	13	190	6,943	7,133	23	9	0
KOYUKUK RIVER TOTALS		24	150	21	507	22,175	22,682	44	11	0
Minto	9/1	1	4	1	7	8	15	1	0	0
Nenana	9/1	10	133	5	2,357	19,007	21,364	3	4	11
Fairbanks (above Wood River)[4]		22			98	5,655	5,753			2
TANANA RIVER TOTALS		33	137	6	2,462	24,670	27,132	4	4	13
Venetie		3	16	3		801	801	3	0	0
CHANDALAR RIVER TOTALS		3	16	3		801	801	3	0	0
Old Crow					9	100	109			
PORCUPINE RIVER TOTALS					9	100	109			
GRAND TOTAL--YUKON RIVER		479+	2,060+	438+	24,755	200,568	225,323	579+	162+	58+

1/ Data from fishing families only.
2/ Mostly chum salmon, but includes small numbers of pink and coho salmon.
3/ From Canadian Department of Fisheries, Whitehorse; only catch data available.
4/ Includes reports turned in by permittees (subsistence fishing permits required for Tanana River above Wood River).

Table 24. Yukon River subsistence salmon fishery data from nonfishermen, 1971.

Village	Nonfishing families	People in families	Sled dogs	Snow-machines	Families with no information 1/
Alakanuk	11	35	7	10	6
Sheldons Point	?	–	–	–	3
Emmonak	20	123	16	13	6
Aproka Pass	0	–	–	–	0
Kotlik	11	59	7	12	1
Mt. Village	18	71	4	9	6
Pitkas Point	3	12	4	3	3
St. Marys	4	12	2	4	4
Pilot Station	18	95	7	9	5
Marshall	5	12	8	1	3
Russian Mission	9	36	10	6	2
Holy Cross	19	70	15	11	0
Anvik	8	37	10	8	2
Grayling	4	23	10	2	1
Kaltag	10	38	7	3	5
Nulato	8	43	28	3	3
Koyukuk	4	19	13	1	0
Galena	3	19	3	3	0
Ruby	0	–	–	–	1
Tanana	3	15	10	1	0
Rampart	1	4	1	0	1
Stevens Village	4	16	17	2	1
Beaver	1	3	9	0	0
Fort Yukon	5	37	31	5	1
Allakaket	1	1	4	1	6
Alatna	1	1	0	0	2
Hughes	1	9	5	0	2
Huslia	2	10	2	4	12
Nenana	1	9	–	1	0
Venetie	1	1	1	1	7
Total	176	810	231	113	83

1/ Most of these families were not interviewed and it was not possible to determine if they fished or not.

Table 25. Aerial survey salmon escapement counts, Yukon district, 1971.[1/]

Stream (Drainage)	Date	Survey Rating	Kings	Cohos	Chums
Andreafsky River					
West Fork	8/1	Fair	1,284		71,745
East Fork	8/1	Fair	1,904		98,095
Total			3,188		169,840
Chulinak River	8/1	Poor[2/]	137	---	8,265
Stuyahok River (Bonasila R.)	7/27	Poor		--	3,145
Hawk River (Bonasila R.)	7/27	Poor		--	600
Salcha River (Tanana River)	8/9	Poor[2/]	159	--	39
Chena River[3/]	8/2-16		263	--	7
Chena River[4/]	9/13		--	--	180
Salcha River (Tanana River)	9/27	Fair	--	--	306 (carcasses)
Clearwater Creek (Tanana R.)	9/27	Good	--	135	202
Clearwater Creek (Tanana R.)[5/]	10/20-21	--	--	3,000	--
South Fork, Koyukuk River	8/11	Fair	179	--	6,950
Jim River (Koyukuk R.)	8/11	Fair	51	--	--
North Fork, Koyukuk River	8/12	Fair	7	--	--
Middle Fork, Koyukuk River	8/11-12	Fair	37	--	50
Tatchun Creek	8/31	Good[2/]	130	--	--
Big Salmon River	8/31	Fair[2/]	97	--	--
Nisutlin River (index area)	8/31	Fair	51	--	--

1/ Tatchun Creek was surveyed by foot.
2/ Also incomplete survey of possible spawning areas.
3/ Combined count by Sport Fish Division (riverboat) and River Basins Studies (helicopter).
4/ Helicopter survey by River Basin Studies.
5/ Aerial and ground count by Sport Fish Division.

Appendix Table 19. Yukon district commercial and subsistence salmon catches, 1918-1971.

Year	Commercial catch				Subsistence catch		
	King	Coho	Chum	Total	King	Other salmon[2/]	Total
1918	12,239	26,144	73,921	112,304		1,400,000	1,400,000
1919	104,822	37,070	327,898	469,790		269,000	269,000
1920	58,467		155,655	214,122	20,000	860,000	880,000
1921	69,646	1,000	111,098	181,744			
1922	16,825			16,825	15,000	330,000	345,000
1923	13,393			13,393	17,500	435,000	452,500
1924	27,375			27,375		1,130,000	1,130,000
1925					15,000	259,000	274,000
1926					20,500	555,000	575,500
1927						520,000	520,000
1928						670,000	670,000
1929						537,000	537,000
1930						633,000	633,000
1931					26,693	565,000	591,693
1932	4,739		4,739		23,160	1,092,000	1,115,160
1933	8,829		8,829		19,950	603,000	622,950
1934	25,365		25,365			474,000	474,000
1935	7,265		7,265		20,400	537,000	557,400
1936	20,963		20,963		22,750	560,000	582,750
1937	6,226		6,226		5,528	346,000	351,528
1938	13,727		13,727		19,244	340,450	359,694
1939	9,987		9,987		18,050	327,650	345,700
1940	18,053		18,053		14,400	1,029,000	1,043,400
1941	29,905		29,905		17,703	438,000	455,703
1942	22,487		22,487			197,000	197,000
1943	27,650		27,650			200,000	200,000
1944	14,232		14,232				
1945	19,727		19,727				
1946	22,782		22,782				
1947	54,026		54,026				
1948	33,842		33,842				
1949	36,379		36,379				

Appendix Table 19. (continued) Yukon district commercial and subsistence salmon catches, 1918-1971.

Year	Commercial catch				Subsistence catch		
	King	Coho	Chum	Total	King	Other salmon	Total
1950	41,808			41,808			
1951	47,196			47,196			
1952	34,405	10,868 3/		45,273			
1953	59,273			59,273		380,000	380,000
1954	59,401			59,401			
1955	58,684			58,684			
1956	63,478		8,000	71,478			
1957	63,623			63,623			
1958	63,259			63,259	11,890	337,500	349,390
1959	78,632			78,632			
1960	67,591			67,591			
1961	120,260	2,855	42,577 2/	165,692	23,719	407,814	431,533
1962	94,734	22,926	53,160 2/	170,820	19,910	358,441	378,351
1963	116,994	5,572		122,566	32,656	421,625	454,281
1964	93,587	2,446	8,347	104,380	22,817	485,630	508,447
1965	118,098	350	23,317	141,765	19,723	458,379	478,102
1966	93,315	19,254	71,045	183,614	14,017	214,236	228,253
1967	129,706	11,047	49,453 2/	190,206	19,661	288,595	308,256
1968	106,526	13,303	67,395	187,224	14,934	192,124	207,058
1969	90,223	14,981	191,860	297,064	14,974	216,243	231,217
1970	80,269	12,245	346,724	439,238	16,362	226,850	243,212
1971	110,507	12,203	289,684	412,394	24,820	201,633	226,453

1/ Mostly chum salmon but including small numbers of pink and coho salmon.
2/ Includes small numbers of pink or red salmon (less than 300).
3/ Previously unreported in Fishery Reports, taken from catch records of Yukon Fishermen Cooperative association, probably includes some chum salmon.

Appendix Table 20. Yukon district commercial vessel and gill net licenses issued by sub-district, 1960-1971.[1/]

	Year	334-10	334-20	334-30	334-40[2/]	Totals
Commercial	1960	193	96		18	307
	1961	238	130	26	18	412
	1962	321	148	46	18	533
	1963	285	131	30	5	451
	1964	319	119	31	18	487
	1965	327	143	34	35	539
	1966	393	143	21	20	577
	1967					607
	1968					585
	1969	406	131	32	21	590
	1970	393	164	33	36	625
	1971	459	162	37	57	715
	1972	473	173	43	56	745
Fishing vessel	1960	186	33		10	229
	1961	210	112	18	10	350
	1962	320	127	31	12	490
	1963	272	113	22	6	413
	1964	314	101	24	12	451
	1965	322	111	26	27	486
	1966	365	113	18	20	516
	1967	381	126	22	20	549
	1968	340	124	26	20	510
	1969	361	93	24	20	498
	1970	349	143	27	28	546
	1971	416	145	29	43	633
	1972	478	153	35	40	646
Set net	1960	183	59		2	244
	1961	217	101	19	1	338
	1962	303	117	14	2	436
	1963	259	101	21	2	383
	1964	277	100	28	4	409
	1965	292	98	23	7	420
	1966	345	101	17	5	468
	1967	333	72	21	5	431
	1968	314	62	26	8	410
	1969	346	62	15	14	437
	1970	345	105	24	17	490
	1971	399	115	30	27	571
	1972	439	111	36	28	634

Appendix Table 20. (continued) Yukon district commercial, vessel and gill net licenses issued by sub-district, 1960-1971.1/

	Year	334-10	334-20	334-30	334-40	Totals
Drift net	1960	2	44			46
	1961	17	86			103
	1962	55	98	24		177
	1963	24	85	5		114
	1964	65	89	5		159
	1965	62	98	4		164
	1966	97	88	4		189
	1967	135	109	5		249
	1968	111	104	8		223
	1969	142	100	10		252
	1970	110	127	16	1	254
	1971	140	134	19	2	295
		155	142	17	5	317

1/ Distribution of licenses by sub-district represents that at the beginning of the fishing season (June 1), some fishermen transfer to other sub-districts during the season.

2/ Fishwheels operated each year were: 1965 (5), 1966 (17), 1967 (?), 1968 (10), 1969 (11), 1970 (17), 1971 (24).

Appendix Table 21. Commercial salmon catches by species and subdistrict, Yukon district, 1960-1971.

Year	King salmon 334-10	334-20	334-30	334-40	Total	Coho salmon 334-10	334-20	334-30	334-40	Total
1960	50,713	15,994	-	884	67,591	-	-	-	-	-
1961	84,463	29,028	4,965	1,804	120,260	2,855	-	-	-	2,855
1962	67,099	22,224	4,687	724	94,734	22,926	-	-	-	22,926
1963	85,004	24,211	6,976	803	116,994	5,572	-	-	-	5,572
1964	67,555	20,246	4,705	1,081	93,587	2,446	-	-	-	2,446
1965	89,268	23,763	3,204	1,863	118,098	350	-	-	-	350
1966	70,788	16,927	3,612	1,988	93,315	19,254	-	-	-	19,254
1967	104,350	20,289	3,618	1,449	129,706	9,925	-	1,122	-	11,047
1968	79,465	21,392	4,543	1,126	106,526	13,153	-	150	-	13,303
1969	70,862	14,799	3,577	985	90,223	14,041	-	845	95	14,981
1970	57,681	17,210	3,712	1,666	80,269	12,245	-	-	-	12,245
1971	86,042	19,226	3,490	1,749	110,507	12,165	-	-	38	12,203

Year	Chum salmon 334-10	334-20	334-30	334-40	Total	Total salmon 334-10	334-20	334-30	334-40	Total
1960	-	-	-	-	-	50,713	15,994	-	884	67,591
1961	42,577[1/]	-	-	-	42,577[1/]	129,895	29,028	4,965	1,804	165,692
1962	53,160[1/]	-	-	-	53,160[1/]	143,185	22,224	4,687	724	170,820
1963	-	-	-	-	-	90,576	24,211	6,976	803	122,566
1964	8,347	-	-	-	8,347	78,348	20,246	4,705	1,081	104,380
1965	22,936	-	-	381	23,317	112,554	23,763	3,204	2,244	141,765
1966	69,836	-	1,209	-	71,045	159,878	16,927	4,821	1,988	183,614
1967	46,148	1,425	1,880	-	49,453	160,423	21,714	6,620	1,449	190,206
1968	62,852[1/]	1,407	3,136	-	67,395	155,470	22,799	7,829	1,126	187,224
1969	184,411	5,024	1,722	703	191,860	269,314	19,823	6,144	1,783	297,064
1970	320,138	22,394	3,285	907	346,724	390,064	39,604	6,997	2,573	439,238
1971	282,461	6,112	50	1,061	289,684	380,668	25,338	3,540	2,848	412,394

1/ includes small numbers of pink or red salmon

Appendix Table 22. Comparative commercial king salmon catch data, Yukon district, 1960-1971[1/].

	Year	334-10	334-20	Sub-total (10+20)	334-30	334-40	Totals -334
Commercial Catch							
	1960	50,713	15,994	66,707		884	67,591
	1961	84,406	29,028	113,434	4,965	1,804	120,203
	1962	67,072	22,224	89,296	4,687	724	94,707
	1963	85,004	24,211	109,215	6,976	803	116,994
	1964	67,555	20,246	87,801	4,705	1,081	93,587
	1965	89,268	23,763	113,031	3,204	1,863	118,098
	1966	70,783	16,927	87,710	3,612	1,988	93,310
	1967	104,335	20,289	124,624	3,618	1,449	129,691
	1968	79,465	21,392	100,857	4,543	1,126	106,526
	1969	70,588	14,799	85,387	3,577	985	89,949
	1970	57,502	17,210	74,712	3,712	1,666	80,090
	1971	84,397	19,226	103,623	3,490	1,749	108,862

	Year	334-10	334-20	Sub-total (10+20)	334-30
Boat Hours (Catch per boat hour)	1960	40,848 (1.24)	34,914 (0.46)	75,762 (0.88)	
	1961	79,224 (1.07)	29,118 (1.00)	108,342 (1.05)	2,808 (1.77)
	1962	84,792 (0.79)	38,118 (0.58)	122,910 (0.73)	2,520 (1.86)
	1963	72,288 (1.18)	27,672 (0.87)	99,960 (1.09)	5,616 (1.24)
	1964	56,736 (1.19)	22,398 (0.91)	79,134 (1.11)	4,596 (1.02)
	1965	78,096 (1.14)	31,008 (0.77)	109,104 (1.04)	2,286 (1.40)
	1966	69,894 (1.01)	22,380 (0.76)	92,274 (0.95)	1,782 (1.23)[2/]
	1967	102,456 (1.02)	37,488 (0.54)	139,944 (0.89)	4,050 (0.89)
	1968	92,450 (0.86)	32,280 (0.66)	124,730 (0.81)	3,745 (1.21)
	1969	84,864 (0.83)	27,828 (0.53)	112,692 (0.76)	3,577 (0.72)
	1970	61,260 (0.94)	20,460 (0.84)	81,720 (0.91)	3,566 (1.04)
	1971	73,272 (1.15)	19,956 (0.96)	93,228 (1.11)	3,490 (0.69)

1/ 334-10 and 334-20 data are only for the king salmon season (June & early July).
2/ Catch per vessel hour does not include 1,421 king salmon captured by an unknown number of fishermen.

Appendix Table 23. Comparative commercial coho and chum salmon catch data for the fall season, subdistrict 334-10 Yukon district, 1961-1971.

Year	Duration	Days[1/] fished	Boat hours	Commercial catch (catch/boat hour) Coho	Chum
1961	8/1-8/31	16	14,772	2,855 (0.2)	42,461 (2.9)
1962	8/1-9/3	21	46,950	22,926 (0.5)	53,116 (1.1)
1963	8/9-9/6	18	2,100	5,572 (2.7)	no purchases
1964	8/3-8/27	17	8,346	2,446 (0.3)	8,347 (1.0)
1965	8/2-8/4	[2/]	[2/]	350 ([2/])	22,936 ([2/])
1966	7/25-9/10	28	41,994	19,254 (0.5)	69,836 (1.7)
1967	7/24-8/27	21	19,272	9,925 (0.5)	36,451 (1.9)
1968	7/22-8/28	22	47,232	13,153 (0.3)	49,857 (1.1)
1969	7/11-8/23	25	47,352	14,041 (0.3)	148,017 (3.1)
	7/21-8/23[3/]	20	39,408	14,041 (0.4)	128,866 (3.3)
1970	7/14-8/26	25	68,712	12,245 (0.2)	232,969 (3.4)
	7/20-8/26[3/]	22	56,160	12,245 (0.2)	200,306 (3.6)
1971	7/12-9/4	32	108,336	12,165 (0.1)	246,384 (2.3)
	7/22-8/28[3/]	22	85,344	11,582 (0.1)	178,744 (2.1)

1/ One "day" is equivalent to 24 hours during open fishing period.

2/ Information not available.

3/ More comparable to duration of fishing for past seasons.

Appendix Table 24. Commercial salmon pack by species and type of processing, Yukon district, 1960-1971. 1/

Year	Cases (48#)			Fresh-frozen (round wt. in lbs.)			Cured King Salmon		Salmon
	King	Coho	Chum	King	Coho	Chum	Tierces	1/2-Tierce	Roe (lbs)
1960	13,000			2/	2/	2/	250	180	
1961	19,474			"	"	"	504	146	
1962	15,959	512	1,760	"	"	"	464	280	
1963	16,400	1,190		"	"	"	2/	2/	
1964	12,041			"	17,100	66,770	537	499	
1965	18,149			275,000	2,500	160,500	670	67	
1966	14,026	836	2,812	414,000	61,355	301,240	398	60	
1967	21,503		126	475,900	66,400	366,496	627	96	1,755
1968	19,499		816	561,690	93,154	454,409	351	170	21,000
1969	9,560	1,104	4,499	423,597	26,973 3/	841,586 3/	647	95	29,000
1970	6,431	1,002	6,413	716,600	12,900	1,725,000	498 4/	191	26,300
1971	6,500	502	3,213	1,058,034	45,836	1,432,455	~~632~~ 5/	395	55,177

1/ Pack represents type of processing when fish were shipped out of district.

2/ Information not available.

3/ Includes approximately 11,600 and 110,500 lbs. (round weight) of coho and chum salmon respectively as salted fish for Japanese market. Also includes 15 tierces of mild cured chum salmon (12,000 lbs round weight).

4/ Includes 51 tierces chum salmon.

5/ Includes 139 tierces chum salmon.

Appendix Table 25. Dollar value estimates of Yukon district commercial fishery, 1960-1971.[1/]

Year	Gross value of catch to fishermen	Wages earned[2/]	Total income to district	Wholesale value of pack[3/]	Tax revenues to State
1960	$	$	$	$	$
1961	437,000.00			1,292,300.00	37,500.00
1962	361,900.00			1,275,250.00	50,400.00
1963	412,300.00			1,550,400.00	42,000.00
1964	354,400.00			1,203,800.00	35,000.00
1965	542,300.00			1,412,700.00	42,000.00
1966	454,500.00			1,308,100.00	37,000.00
1967	606,400.00	250,000.00	856,400.00	1,864,800.00	41,700.00
1968	535,000.00	264,000.00+	799,000.00+	1,655,156.00	47,000.00
1969	519,200.00	234,000.00+	753,000.00+	1,976,179.00	40,000.00
1970	623,100.00	185,800.00+	808,900.00+	2,113,100.00	45,000.00
1971	783,000.00	357,700.00+	1,140,700.00+	2,106,600.00	42,000.00

1/ Information not available for 1960 and wages earned during 1961-1966.

2/ Includes wages paid to tender boat operators, processing plant employees in district.

3/ Based on type of processing when fish were shipped out of the district.

Appendix Table 26. Estimated mean prices paid to fishermen, Yukon district, 1961-1971[1/] (prices per fish)

Year	King	Coho	Chum	Other
1961	$3.50	$	$	$
1962	3.50			
1963	3.50			
1964	3.75	.50	.25	
1965	4.50		.35	
1966	4.50	.50	.35	
1967	4.50	.50	.35	
1968	4.64	.50	.50	
1969	4.60	.55	.50	
1970	5.00	.84	.61	
1971	5.34	.82	.64	

1/ Information not available for some species.

Appendix Table 27. Mean weights and numbers of salmon per case, Yukon district, 1962-1971.[1/]

	Mean round weight in pounds[2/]			Mean no. of fish/case[3/]		
Year	King	Coho	Chum	King	Coho	Chum
1962				3.2	13.3	10.5
1963						
1964	22.6		8.0	3.4		
1965	23.0		6.6	3.3		
1966	23.0		6.9	3.5		
1967	24.0	7.3	7.0	3.2		
1968	26.5		8.3	3.3		11.0
1969	23.9	6.7	6.5	3.4	10.0	12.0
1970	22.3	7.1	6.7	3.7	10.6	11.7
1971	22.6	6.9	6.4	3.3	10.3	12.4

1/ Information is not available for some species.
2/ Based on age-length-weight samples or fish ticket entries.
3/ Standard 48 lb. case.

Appendix Table 28. Yukon River comparative subsistence catch and effort data, 1961-1971 (numbers per fishing family are in parenthesis)

Year	Total catch		Equivalent catch[1]		Mean equivalent catch per family[1]	
	King salmon	Other salmon[2]	King salmon	Other salmon[2]	King salmon	Other salmon[2]
1961	23,719	407,814	23,719	405,632	38	650
1962	19,010	358,441	13,010	329,144	23	583
1963	32,656	421,625	26,141	372,578	44	624
1964	22,817	485,630	19,480	460,712	32	765
1965	19,723	458,379	16,950	436,306	31	806
1966	14,017	214,236	11,507	204,913	23	415
1967	19,661	288,595	16,306	256,926	35	545
1968[3]	14,832	189,607	11,883	170,522	25	358
1969	14,946	213,725	13,916	195,476	30	426
1970	15.926	223,237	13,474	199,163	34	498
1971	24,755	200,568	21,670	171,247	51	399

Year	Fishing families surveyed[1]	People in fishing families[1]	Snow machines[1]	Sled dogs[1]	Gear operated[1]	
					Gill nets	Fishwheels
1961	624	3,626(5.8)		4,806(7.7)	577	169
1962	564	3,279(5.8)		3,848(6.8)	613	138
1963	597	3,460(6.9)		4,155(7.0)	716	156
1964	602	3,524(6.0)		4,003(6.6)	840	155
1965	541	3,453(7.3)		3,974(7.3)	647	127
1966	494	3,144(6.4)		3,112(6.3)	578	116
1967	471	2,756(5.9)	192(0.4)	2,752(5.8)	530	87
1968	476	3,109(6.5)	262(0.6)	2,719(5.7)	565	71
1969	459	2,974(6.5)	349(0.8)	2,442(5.3)	594	63
1970	400	2,679(6.7)	346(0.9)	2,214(5.5)	647	55
1971	429	2,795(6.5)	414(1.0)	1,894(4.4)	683	56

1/ Data from villages surveyed each year since 1961: mouth to Fort Yukon and Tanana River(does not include Fairbanks area)
2/ Mostly chum salmon, some pinks and cohos.
3/ Total king and other salmon catches have been corrected.

Appendix Table 29. Comparative Yukon River drainage king salmon escapement counts 1959-1971.[1/]

Year	Andreafsky River (East fork)	Andreafsky River (West fork)	Anvik River
1960	1,020	1,220	1,950
1961	1,003		1,226
1962	675[2/]	762[2/]	
1963			
1964	867	705	
1965		355[2/]	650[2/]
1966	361	303	638
1967		276[2/]	336[2/]
1968	380	383	297[2/]
1969	231[2/]	274[2/]	296[2/]
1970	665	574[2/]	368[2/]
1971	1,904	1,284	

Year	Salcha River	Nisutlin River (Sidney-100 Mile Cr.)	Whitehorse Dam Fishway
1959			1,054
1960	1,660		660
1961	2,878		1,068
1962	937		1,500
1963			484
1964	450		587
1965	408		903
1966	800		563
1967			533
1968	735	407	407
1969	461[2/]	105	334
1970	1,882	615	625
1971	159[2/]	640[3/]	856

1/ With exception of Whitehorse fishway counts, the data was obtained from aerial surveys which were made only of the main stem of each river listed.
2/ Incomplete survey or poor survey conditions resulting in a very minimal count.
3/ Canadian Department of Fisheries survey.